Contents

Preface xv

Overview Presentations

Overview of effects of liver disease, alcohol consumption and substance abuse on immune response and infection
M C Mitchell 3

Alcohol and the human immune system
H Darban, G B Crawford and R R Watson 5

Alcohol Induced Nutritional Changes: Effects Immunomodulation and Disease Resistance

Splenocyte populations in alcoholic, mature C57BL/6 mice fed diets with different nutritional adequacy
B Watzl, M Lopez, L M Shahbazian and R R Watson 13

Malnutrition, immunoregulatory defects and the white plague
D N McMurray, E S Mainali and S Phalen 19

T cell subsets in alcohol-consuming C57BL/6 mice: alteration of copolymer-specific humoral and cell-mediated immune function
C Waltenbaugh and L Hsiung Dech 29

In vitro effect of ethanol and acetaldehyde on the functions of splenocytes from rats fed a low protein diet
K Maekawa, S Moriguchi and Y Kishino 41

Ethanol metabolism in the gastrointestinal tract and its clinical consequences
H K Seitz and B R Osswald 47

The *in vivo* effects of free radicals on retinoic acid metabolism
C D Eskelson, D L Earnest, O Odeleye, R R Fleming and R R Watson 53

Ethanol Modulation of Human Lymphocyte Functions

Alcoholism and reduced natural killer cell activity: role of central CRH in neural control of immunity
M R Irwin 69

Natural killer cells and alcohol
S E Blank, G G Meadows, L J Pfister and R M Gallucci 79

Phenotypic alterations of lymphocyte fine subsets in the alcoholic: implications for function
R T Cook, Z K Ballas, T J Waldschmidt, B L Cook, D R LaBrecque and C Byers 91

Inhibition of cellular immune responses of lymphocytes from healthy donors and AIDS patients by alcohol
M P N Nair, S A Schwaartz, Z A Kronfol, L A Saravolatz, E P Heimer, R Pottathil and J F Greden 103

Lymphocyte subsets and natural killer cytotoxicity in alcoholism
Z Kronfol, M Nair, K Goel, D Sufalko, C Greeley and J Greden 115

Monocyte-mediated immunodepression after acute ethanol exposure
G Szabo 121

Ethanol and Cytokines

A role for cytokines in alcoholic hepatitis
C J McClain, D B Hill, L Marsano, D Cohen and S Shedlofsky 133

Effect of ethanol feeding on interleukin production, tumor induction, infection and other immunocompetency in mice
Tai-You Ha 143

Ethanol and murine retrovirus modulation of cytokine production by thymocytes
R R Watson, Y Wang, D S Huang, M Lopez and S Wood 153

Cytokines - mediators of acute alcoholic hepatitis
G L A Bird 163

Plasma interleukin-8 levels elevated in acute alcoholic hepatitis
D B Hill, L S Marsano, S I Shedlofsky, R Talwalkar, N S Murali, C Mendenhall, C J McClain and the Veterans Administration Co-operative Study No.275 173

Ethanol and Hepatic Immunology

Kupffer cell function is modified by both diet and ethanol
D L Earnest, E R Abril, C S Jolly and C D Eskelson 181

Kupffer cell funciton in alcoholics - A review
Y Shiratori, T Kawase, Y Komatsu, S Shina, M Matsumura, Y Niwa, T Shimada, T Sugimoto, M Omata, K Kamil and M Tanaka 191

Alcohol and lymphocytes of the liver
J M Jones, L Albornoz, O Yeralan and R L Veech 203

Hepatic superoxide formation during acute or chronic ethanol intoxication
A P Bautista and J J Spitzer 211

Alcohol, liver diseases and immunodeficiency
S Moriguchi, J K Kim and Y Kishino 219

Effects of ethanol alone or in combination with infection, toxins or drugs of abuse on the hepatic microcirculation
R S McCuskey, H Eguchi, J Nishida, M A Krasovich, D McDonnell, B Watzl, W Ekataksin, C S Jolly, E R Abril, D L Earnest and R R Watson 227

A small dose of ethanol exacerbates hepatic microcirculatory impairment, endotoxemia and lethality in septic mice
J Nishida, W Ekataksin, D McDonnell and R S McCuskey 235

Mustela putorius furo as a model of alcoholism
M Bernas, P Borgs, G Ramirez Jr, and M Witte 241

In vitro tumor necrosis factor cytotoxicity in Hep G2 liver cells
D B Hill, S Shedlofsky, J Schmidt D Cohen and C J McClain 245

Ethanol-induced cell cycle kinetic alterations in cultured endothelial cells
D Way, P Borgs, G Ramirez, M H Witte and C L Witte 251

Acute ethanol administration and hepatosplanchnic lymph dynamics
P Borgs, D L Way, M H Witte and C L Witte 255

The evolution of fibrosis and sinusoidal capillarization in experimental alcoholic liver disease
G Ramirez, P Borgs, D L Way, A Bhattacharyya, L Ellsworth, M H Witte and C L Witte 261

Immunomodulation by Alcohol in Murine AIDS

Effect of calorie restriction and omega-3 fatty acid diet therapy on autoimmunity and MAIDS
G Fernandes 269

Mechanism of anergy in $CD4^+$ T cells during murine AIDS
D A Cohen, E A Fitzpatrick, C A Rhoads, J M Guthridge and A M Kaplan 281

CD4 T-cell subsets and superantigen in MAIDS
G Muralidhar, S Koch and S L Swain 289

Modulation of the intestinal immune system by ethanol and MAIDS
M C Lopez, D S Huang, Y Wang, K King and R R Watson 299

The effects of cytokines and MAIDS on hepatic drug metabolism
S Ansher, W Thompson and R R Watson 305

Alcohol, cocaine, MAIDS and resistance to *Giardia*
T M Petro, R R Watson, D E Feely and H Darban 315

Proliferation of spleen and mesenteric lymph node (MLN) cells in retrovirus-induced immunodeficient mice
D S Huang, Yuejian Wang, C C Lung, P T Giger and R R Watson 325

Humoral immune response and resistance to *cryptosporidium parvum* in a murine model of AIDS after chronic ethanol consumption
J I B Alak, M Shahbazian, A R Hebert, D S Huang, Yuejian Wang, H Darban, E M Jenkins and R R Watson 331

The kinetics of imbalanced cytokine production by T cells and macrophages during the MAIDS
Yuejian Wang, D S Huang, P T Giger and R R Watson 335

Thymosin modulation of the persistence of *cryptosporidum* in mice with MAIDS
H Darban Yuejian Wang, M Shahbazian, J Alak, G Crawford and R R Watson 341

Augmentation of immune reactivity by chronic ethanol feeding in mice - effect on development of MAIDS
D A Cohen, E A Fitzpatrick, C A Rhoads, R Honchel, P Espandiari, A M Kaplan and C J McClain 347

Effect of thymosin alpha-1 on immune responses of C57BL/6 mice fed an ethonol diet and challenged with *streptococus pneumoniae*
M Shahbazian, A Stazzone, H Darban, A Hebert and R R Watson 353

Ethanol and Cancer Growth

Tumor promotional effects of long-term ethanol consumption
S I Mufti 361

Effect of morphine ketorolac, and epidural analgesia on natural killer cell activity and tumor growth
M P Yeager, T A Colacchio and P M Guyre 371

Ethanol, natural killer cells, and tumor progression in rats
S Ben-Eliyahu, R Yirmiya, G G Page, F Chiappelli, J C Liebeskind and A N Taylor 377

Increased hepatic peroxides in experimental esophageal tumorigenesis: evidence for association of lipid peroxidation with carcinogenesis
O E Odeleye, C D Eskenson, S I Mufti and R R Watson 387

Ethanol and melanoma metastisis
G G Meadows, C A Elstad, S E Blanck, L J Pfister, J-O Johansson and R M Galluci 399

Studies on the correlation of lipid fatty acid composition with alcohol-related tumorigenesis
V Nachiappan, S I Mufti, C D Eskelson and R Rajasekharan 411

Effects of ethanol on the growth of benign and neoplastic breast cells
D E Saunders, J R Williams, N L Wappler, E L Abel, C Christensen, J M Malone, V K Malviya and G Deppe 417

Ethanol-induced facilitation of tumor metastases: effects of immune modulation and interaction with stress
R Yirmiya, S Ben-Eliyahu, G G Page, O Donchin, E Cohen, Y Shavit, J C Liebeskind and A N Taylor 421

Immunotoxicology of drug and alcohol use: relevance to AIDS and cancer
R Pillai and R R Watson 427

Alcohol and Immunosuppression: Role in Infectious Disease

Detection of low level hepatitis B and hepatitis C virus genome in alcoholics
F von Weizsäcker, H Blum, T Poynard and J R Wands 439

Alcohol, neutrophils, and viral infections
P R Wunder, J L Waner and A K Balla 449

Host susceptibility to *P. carinii*: factors influencing alveolar macrophage interactions with *P. carinii*
V B Antony, S F Queener and W J Martin II 457

Effects of acute *in vitro* ethanol exposure on pulmonary alveolar macrophages
C Grove and R Clark Lantz 463

Pathogenesis of *escherichia coli* in pigs under acute cocaine exposure
G Leitner, J M Risdahl, L M Schwandt, P K Peterson and T W Molitor 467

Effects of ethanol on phagocytosis and bactericidal activity of polymorphonuclear leukocytes for *Streptococcus pneumoniae*
M A Mellencamp 473

Development of prenatal immunity

Astrocyte dysfunction and its implications in prenatally ethanol exposed rats
S Tewari, L Komanapalli, T Van and V Carson 483

Maternal aclohol and lactational immunity to *Trichinella spiralis* infection
W M Steven and L L Seelig Jr 493

Neuroimmune effects of prenatal ethanol exposure in CD-1 rats and C57BL/6 mice
P Clausing, B Günther, A Emmendörfer, M -L Lohmann-Matthes, L D Taylor, G Newport and M G Paule 503

Neuroimmunology

Neuroepidemiology of recreational drug use and stroke
C A Molgaard, R M Matteucci and J Rothrock 515

Immunocytochemical distribuiton of CD4-like molecules: AIDS retrovirus receptors in brains of rats administered ethanol
G P Kozlowski and I Šterzl 523

Sex differences and the effects of alcohol on immunomodulation
C J Grossman, M Neinaber, C L Mendenhall, G A Roselle, P Hurtubise, S Rouster, N Weber and G Schmidt 535

Stress modificaiton of serum proteins in young adults
M A Varas, S Veitl, C Sanhueza, D Girardi and M Silva 541

The effect of psychoneurogenic stress on polymorphonuclear leukocytes
A Balla, J Nixon, D Gauvin, M Lerner, E Doi, F Holloway and D Brackett 549

Opioids and Immune Responses

The role of interferon-α in attenuating naloxone precipitated morphine withdrawal
N R S Hall, M P O'Grady and R A Menzies 557

Effects of opioids on murine antibody responses
J L Bussiere, D D Taub, J J Meissler Jr, M W Adler, T J Rogers and T K Eisenstein 563

Modulation of simian AIDS by opioids
R Y Chuang, D J Blackbourn, L F Chuang, Y Liu and K F Killam Jr 573

The mouse thymoma cell line R1.1 expresses a kappa opioid receptor
J M Bidlack, L D Saripalli, D M P Lawrence and D B Joseph 585

Acute morphine administration alters the expression of ß-adrenergic receptors on splenic lymphocytes
J W Baddley, D Paul and D J J Carr 593

Evaluation of immunocompetence in chemical dependency state
S Lavasa and A Vohra 599

The kappa opioid receptor on the R1.1 thymoma cell line is coupled through a G-protein to adenylyl cyclase
D M P Lawrence and J M Bidlack 603

Ethanol enhances hepatotoxicity of cocaine and cocaethylene
S V Pirozhkov, R R Watson and C D Eskelson 609

Cocaine associated abnormalities in and natural killer cell function in Hispanic drug abusers
R Pillai, J Erickson, T Poet, F Martinez, A L Estrada and R R Watson 619

Drugs of Abuse, Immune Responses and AIDS

Immunotherapy for drugs of abuse
S M Owens 633

Parkinson's disease and tobacco: an evaluation of explanatory models
A L Golbeck, C A Molgaard and L S Gresham 639

Immunotoxicity of nitrite inhalants
L S F Soderberg and J B Barnett 645

Marijuana inhibition of cytotoxic T-lymphocyte activity
G A Cabral, D A Dove Pettit and K Fischer-Stenger 653

Cigarette smoke and the immune response: mechanism of nicotine induced immunosuppression
M L Sopori, S M Savage, R F Christner, Y -M Geng and L A Donaldson 663

The influence of cocaine *in vivo* and *in vitro* on production of cytokines by Th1 and Th2 cells
Yuejian Wang, D S Huang, P T Giger and R R Watson 673

Effects of agonists and antagonists of opioid receptors on immune cells
D Pasotti, A Mazzone and G Ricevuti 679

The mechanisms of alcohol and cocaine-induced HIV-1 replication: prospects for molecular vaccines against AIDS
O Bagasra and R J Pomerantz 683

Subject index 699